

CLAIMS:

---

1. (previously presented): A loudspeaker assembly comprising a visual display screen, a panel-form member positioned adjacent to the display screen and at least a portion of which is transparent and through which the display screen is visible, and at least one vibration exciting transducer mounted to an edge or marginal portion of the panel-form member to cause the panel-form member to act as an acoustic radiator, wherein the panel-form member is adapted to be resonant when excited at audio frequencies, wherein the vibration exciting transducer is adapted to apply bending wave energy to the panel-form member to cause it to resonate to act as an acoustic radiator when resonating, and wherein one or more marginal portions of the panel-form member are clamped or restrained.

2. (previously presented): A loudspeaker assembly according to claim 1, wherein the whole of the panel-form member is transparent.

3. (previously presented): A loudspeaker assembly as claimed in claim 1 or claim 2, wherein the panel-form member is of plastics.

4. (previously presented): A loudspeaker assembly as claimed in claim 1 or claim 2, wherein the panel-form member is selected from the group consisting of polystyrene, polycarbonate, glass and a laminate of plastics and glass.

5. (previously presented): A loudspeaker assembly according to claim 1 or claim 2, wherein the panel-form member is a laminate comprising a core of plastics or aerogel with skins of glass.

6. (previously presented): A loudspeaker assembly according to claim 1 or claim 2, comprising more than one vibration exciting transducer.

7. (previously presented): A loudspeaker assembly according to claim 1 or claim 2, comprising vibration exciting transducers mounted in pairs to at least one edge or marginal portion of the panel-form member.
8. (previously presented): A loudspeaker assembly according to claim 7, wherein the vibration exciting transducers are coupled directly to the panel-form member.
9. (previously presented): A loudspeaker assembly according to claim 1 or claim 2, wherein the vibration exciting transducer is coupled directly to the panel-form member.
10. (previously presented): A loudspeaker assembly according to claim 1 or claim 2, wherein the vibration exciting transducer is electrodynamic.
11. (previously presented): A loudspeaker assembly according to claim 1 or claim 2, wherein the vibration exciting transducer is inertial.
12. (previously presented): A loudspeaker assembly according to claim 1 or claim 2, comprising an associated support for the loudspeaker assembly.
13. (previously presented): A loudspeaker assembly according to claim 12, wherein the associated support is a frame or chassis.
14. (previously presented): A loudspeaker assembly according to claim 13, wherein the resonant panel-form member is resiliently supported on the associated support.
15. (previously presented): A loudspeaker assembly according to claim 14, wherein the vibration exciting transducer is resiliently mounted in the associated support.
16. (previously presented): A loudspeaker assembly according to claim 15, wherein the panel-form member is rectangular, and wherein a resilient panel support extends along at least three adjacent edges of the panel-form member.

17. (previously presented): A loudspeaker assembly according to claim 1 or claim 2, wherein the vibration exciting transducer comprises a transparent piezoelectric or electret on or in at least a part of the panel-form member.

18. (canceled)

19. (previously presented): A loudspeaker assembly according to claim 1 or claim 2, wherein the whole periphery of the panel-form member is mechanically clamped.

C / 20. (previously presented): A loudspeaker assembly according to claim 1 or claim 2, wherein the panel-form member is mounted in an associated cavity or enclosure enclosing a face of the panel-form member whereby acoustic radiation from the enclosed face is at least partly contained within the enclosure or cavity.

21. (previously presented): A loudspeaker assembly according to claim 20, wherein the enclosure or cavity is shallow in depth such as to modify the modal behaviour of the panel-form member.

22. (previously presented): A loudspeaker assembly according to claim 1 or claim 2, wherein the display screen is integral with the panel-form member.

23. (previously presented): A loudspeaker assembly according to claim 22, wherein the integral display screen comprises a light emitting surface.

24. (previously presented): A loudspeaker assembly according to claim 1 or claim 2, wherein the panel-form member forms the external face of a visual display unit.

25. (canceled)

26. (previously presented): A loudspeaker assembly according to claim 1 or claim 2, wherein the resonant panel-form member has a user-accessible surface and means on or associated with the surface and responsive to user contact.

27. (previously presented): A loudspeaker assembly according to claim 26, wherein the user-responsive means on the panel-form member allows instructions or information to be entered, and is selected from the group consisting of pads, areas, switches and buttons.

28. (previously presented): A loudspeaker assembly according to claim 26, where the user-responsive means comprises visible areas on the panel-form member, delineated by printing or labelling, which sense the presence or contact by a user.

C / 29. (previously presented): A loudspeaker assembly according to claim 26, wherein the user-responsive means comprises metallised user responsive contacts of transparent metal oxide film or thin metal film on the panel-form member.

30. (previously presented): A loudspeaker assembly according to claim 26, wherein the user responsive means is positioned at the perimeter of the panel-form member.

31. (canceled)

32. (canceled)

33. (canceled)

34. (canceled)

35. (canceled)

36. (previously presented): A loudspeaker assembly according to claim 12, wherein the vibration exciting transducer is resiliently mounted in the associated support.

37. (previously presented): A loudspeaker assembly according to claim 14, wherein the panel-form member is rectangular, and wherein a resilient panel support extends along at least three adjacent edges of the panel-form member.

38. (previously presented): A loudspeaker assembly according to claim 22, wherein the integral display screen comprises a light transmitting surface.

39. (previously presented): A loudspeaker assembly according to claim 22, wherein the integral display screen comprises a light reflective surface.

C | 40. (new): A display screen module comprising a loudspeaker assembly and a chassis or frame, wherein the loudspeaker assembly comprises a visual display screen, a panel-form member positioned adjacent to the display screen and at least a portion of which is transparent and through which the display screen is visible, and at least one vibration exciting transducer mounted to an edge or marginal portion of the panel-form member to cause the panel-form member to act as an acoustic radiator, wherein the panel-form member is adapted to be resonant when excited at audio frequencies, wherein the vibration exciting transducer is adapted to apply bending wave energy to the panel-form member to cause it to resonate to act as an acoustic radiator when resonating, wherein one or more marginal portions of the panel-form member are clamped or restrained, and wherein the chassis or frame supports the display screen and supports the transparent panel-form member.

41. (new): A display screen module according to claim 40, wherein the whole of the panel-form member is transparent.

42. (new): A telephone receiver comprising a loudspeaker assembly which comprises a visual display screen, a panel-form member positioned adjacent to the display screen and at least a portion of which is transparent and through which the display screen is visible, and at least one vibration exciting transducer mounted to an edge or marginal portion of the panel-form member to cause the panel-form member to act as an acoustic radiator, wherein the panel-form member is adapted to be resonant when excited at audio frequencies, wherein the vibration exciting transducer is adapted to apply bending wave energy to the panel-form member to cause it to resonate to act as an acoustic radiator when resonating, and wherein one or more marginal portions of the panel-form member are clamped or restrained.

43. (new): A telephone receiver according to claim 42, wherein the whole of the panel-form member is transparent.

44. (new): A portable personal computer comprising a loudspeaker assembly which comprises a visual display screen, a panel-form member positioned adjacent to the display screen and at least a portion of which is transparent and through which the display screen is visible, and at least one vibration exciting transducer mounted to an edge or marginal portion of the panel-form member to cause the panel-form member to act as an acoustic radiator, wherein the panel-form member is adapted to be resonant when excited at audio frequencies, wherein the vibration exciting transducer is adapted to apply bending wave energy to the panel-form member to cause it to resonate to act as an acoustic radiator when resonating, and wherein one or more marginal portions of the panel-form member are clamped or restrained.

45. (new): A portable personal computer according to claim 44, wherein the whole of the panel-form member is transparent.

46. (new): A portable personal computer as claimed in claim 44 or claim 45, comprising a body having a key pad and a lid adapted to enclose the key pad and carrying a display screen, and wherein the display screen comprises the loudspeaker assembly.

---